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Mrs. Graf

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S. H. McCrory visited the cotton ginning laboratory at Stoneville, Miss. on January 11 and 12, where he conferred with Chas. A. Bennett of this Bureau and Dr. R. W. Webb, and F. L. Gerdes, of the Bureau of Agricultural Economics, on matters pertaining to the cotton ginning and fiber investigations.

L.A. Jones left Washington January 21 to render advice and assistance to the subsistence homestead unit at Elkins, W. Va. After inspecting work being done by F. E. Staebner at Reedsville, W. Va. he inspected ECW projects in Indiana. He will confer with L. C. Tschudy at Chicago before returning to the Washington office.

A proposed unit of the subsistence homestead division of the Department of the Interior located near New Smyrna, Fla. was inspected and reported upon by B. S. Clayton.

According to B. O. Childs, irrigated plots in the drainage and irrigation of sugar cane studies in Louisiana yielded practically the same as the check plots, indicating that irrigation was of no benefit during the past season. Plots drained by deep open ditches yielded much greater tonnages than the check plots; plots with ditches 6 feet deep yielded 19.5 tons per acre; plots with 4 1/2 foot drainage 15.1 tons per acre; 3-foot drainage 15.7 tons per acre; check plots 14.0 tons per acre.

C. E. Ramser visited the Hooks Brothers farms near Itasca, Tex. on December 13. The farms comprise an area of about 7,000 acres of rolling land in the Texas black belt, with 70 per cent devoted to the growth of cotton. Both terracing and strip cropping is practiced on this land. The manager, Fred Newport, stated that strip cropping is practiced in order to minimize the effects of erosion as much as possible prior to terracing and is regarded only as a temporary expedient until the land can be properly terraced.

According to P. C. McGrew, a total of 8.43 inches of rainfall for the Pullman Station occurred during the month of December. This is the record rainfall for December for the past 41 years.

An experiment on the Bethany soil-erosion station gives soil losses in tons per acre due to erosion for the year 1932, for different crops on terraced land, as follows:- Corn, 8.26 tons; soybeans, 4.16 tons; clover, and timothy with lespedeza, 0.42 ton; wheat, 2.61 tons; and oats and sweet clover, 0.54 ton. A. T. Holman states that the order of the losses for the various crops varied a great deal during the year, depending upon the seasonable condition of the crop.

Level terraces with closed ends are impractical on the Tyler soil-erosion station due to excessively heavy rains according to Baird. One rain of 5.94 inches caused numerous breaks in such terraces due to overtopping. It is believed that a practical method can be devised for holding and releasing water above closed and level terraces according to needs of crops.

N. A. Kessler recently made a trip to Mississippi to investigate the land-clearing phases of a number of tracts under consideration for subsistence homesteads for the Division of Subsistence Homesteads, Department of the Interior. These are located in the vicinity of Richton, Laurel, Hattiesburg, McComb, Meridian, and Tupelo, Miss. Two are wholly land-clearing projects; the others contain both cleared and cut-over land.

A paper entitled "The Soil Erosion Problem in the North Atlantic States" was delivered by S. P. Lyle at the North Atlantic Section meeting of the A.S.A.E. at Harrisburg, Pa.

Plans for controlling floods from the Ute Pass region north of Pikes Peak, Colo. and thus removing the menace to life and property at Colorado Springs and vicinity were reviewed by L. M. Winsor in consultation with Forest Service officials from the regional office at Denver. Two erosion-control E.C.W. camps are stationed near Manitou, and are devoting their time to the construction of major flood-control structures.

A paper on "The Cross Transfer of Water in Mature Lemon Trees", prepared by Colin A. Taylor of this bureau and J. R. Furr of the Bureau of Plant Industry, was submitted and approved for outside publication. The study indicated a ready cross-transfer of water throughout the tree. For plotting of fruit measurements in relation to irrigation, Mr. Taylor has devised boards on which the growth curves of naval oranges may be plotted. Four of these were used at Corona, Calif., by the American Fruit Growers' Corona plantation. A scale is being devised for use with lemons.

Meetings of the Oregon State Horticultural Society at Medford, Oreg. were attended by M. R. Lewis and R. A. Work. The fruit growers of the State exhibited much interest in the work being carried on at our Medford station.

O. A. Faris has accepted a position as engineer appraiser with the Federal Land Bank of Houston, Texas, effective January 1.

R. L. Parshall, in company with H. F. Blaney, visited Imperial Valley, Calif. for the purpose of making a preliminary inspection to determine the most desirable site for the proposed silt and bed-load-removal laboratory. Several points along the canals of the Imperial Irrigation District were given consideration but no decision as to location has as yet been made.

A. A. Young has furnished some figures indicating the efficiency of "the largest plow in the world" (briefly described in the Monthly News Letter of April, 1932), in restoring fertility to soils in the lower Santa Ana Valley, Calif. which is an alluvial plain in which good soil alternates with layers of sand at various depths below the surface. Such a sand layer prevents sufficient moisture from rising to the surface from the shallow water table, and prevents crop roots from penetrating to the moisture below, as the sand is too dry for their growth. For use on such land, a single plowshare was substituted for the double one previously described. The width of the furrow at the ground level is about 8 feet, sloping down to 3 feet at a depth of 42 inches. Plowing

is, of course, followed by cross-plowing or discing in order to level the field. A recent survey to determine effects of this deep plowing showed that following plowing to a depth of 42 inches, the yield of lima beans increased from 10 sacks in 1932 to about 20 sacks in 1933 on an area of 82 acres. On a very sandy tract, which previously had not produced any crops, 10 sacks of beans per acre were produced after plowing. A field covered with a deposit of river sand yielded no crop before plowing but produced a fair crop of chili peppers the year after the sand was plowed under. On another field the yield of beans was increased 50 per cent after plowing to a depth of 17 inches. The cost of deep plowing was therefore paid for by the increase in the first year's crop.

R. B. Gray attended the North Atlantic Section meeting of the A.S.A.E. at Harrisburg, Pa., on January 17 to 19, and delivered a paper on Alcohol-Gasoline Blends. Mr. Gray spent the 20th with Frank Irons at Moorestown, N.J. inspecting the new shop and storage room built with P.W.A. funds and discussing future plans.

A stalk-cutting attachment for use on corn pickers in corn-borer control has been developed at Toledo. R.M. Merrill reports that a corn picker equipped with the attachment cuts the cornstalks at the ground surface, picks and husks the ears, and cuts the stalks into half-inch lengths, thus destroying practically all corn borers sheltered in the stalks.

A disc jointer for plows, which largely eliminates adjustment troubles and scouring difficulties common to the moldboard-type jointer, also has been developed at Toledo. This jointer has been tested at Toledo, O., Urbana, Ill.; and Ames, Iowa.

An experimental tower drier for drying forage crops is being constructed at Jeanerette, La., with P.W.A. funds under the direction of E. D. Gordon. The building used for housing the forage-drying equipment is also being enlarged and provision is being made for a shop.

Progress on the design and construction of a beet cultivator attachment for the wheel-type farm tractor is reported by E.M. Mervine.

Edwin C. Hansen, formerly stationed at Toledo, Ohio, has been employed temporarily to assist with the fertilizer-machinery project at Arlington Farm, Virginia.

M.A.R. Kelley spent a few days at the Agricultural experiment station at Raleigh, North Carolina advising in the planning of a set of proposed new buildings for the experiment farm.

J. R. McCalmont of this Bureau and Ralph P. Hotis of the Bureau of Dairy Industry have completed a manuscript on mechanical refrigeration on the dairy farm.

A. H. Senner has completed his manuscript on the use of steam for sterilization for greenhouses.

The Division of Structures is cooperating with the Bureau of Home Economics in a survey of farm housing in 300 counties of the United States - a C.W.A. project. The division is taking an active part in the preparation of plans for improving farmhouses and for remodeling and modernizing existing farm homes. Cooperative arrangements also have been made with the agricultural engineering departments of 18 States. They being furnished funds to employ engineers and draftsmen for the purpose of getting out new house designs and specifications for suitable equipment. The present situation presents an opportunity for great advancement in farmhouse convenience. Farmers now seeking establishment on subsistence homesteads should be especially benefited by the new plans for houses which can be built a portion at a time. The new plans provide adequate space even though it may be necessary to omit the interior finish until more money is available. Nine temporary employees have been engaged for this work in the Washington office.

The Library is anxious to locate the following books:

- King, H. W. Handbook of hydraulics for the solution
of hydraulic problems 2d ed. 1929.
- Meyer, A. F. Elements of hydrology. 2d ed. 1928.
- Pickels, G. Drainage and flood control engineering.